# Apple PRESS

San Francisco Apple Core

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# GENERAL MEETINGS

## JUNE 18
## * JULY 9
## AUG 20

* NOTICE: The date of the July General Meeting is NOT the usual third Saturday

JUNE, 1983

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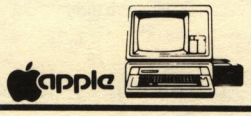


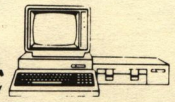


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# CIDER PRESS

REM We like to think of this publication as being "user-friendly" and "interactive." The direction it takes should be guided by the membership by making us aware of your interests and needs. In order to better serve you (the members) and make the *Cider Press* more valuable to you, we (the editor) ask that you let us (the staff) know what you would like to see and read about in these pages. In that way, our efforts and our labour will be more fruitful to you and more satisfying to us.

We would also like to remind you that the July general meeting is being held on the 9th of the month instead of the usual third Saturday when the building will be stripped of asbestos. The scheduled demos for the next two general meetings are discussed below.

We try to do asbestos we can. Bon apetite!

-Editor.

.....

***June Meeting***

## Ideas and Illustrations

By Michael Fischer

June's general meeting features demonstrations of two programs: *Think Tank*, called the first idea processor and *The Illustrator*, a superb new graphics program. The meeting will be held on June 18 from 10 a.m. to noon in Room 100, Building C, Fort Mason, San Francisco.

### Think Tank

*Think Tank* from Living Videotext will be demonstrated by its author, Dave Winer. He says *Think Tank* is designed for developing and manipulating ideas.

The program helps you construct an outline of ideas on the screen. The outline defines the relationship of the ideas to each other. It can be modified, expanded, contracted, printed in whole or in part. Ideas are expressed either as headlines or paragraphs. There is even a search function.

The New York Times has favorably reviewed the program. They were particularly impressed with the documentation. I have seen a prototype version of the program and am very impressed.

### The Illustrator

*The Illustrator* from Island Graphics will be demonstrated by Diane Ascher-Leyand. The program is a very versatile and sophisticated high resolution graphics drawing program which, due to a well designed menu system, is one of the easiest to use of the available graphics programs. It features multiple brush shapes, a claim of over 17 billion color pattern combinations (no, I haven't counted them), and one of the nicest circle drawing routines I've seen.

The program is very user friendly, even in its prototype versions, and can use either game paddle, joystick, keyboard or graphics tablet input. A version to run with the *Gibson Light Pen* is under development.

Come see the program -- you'll be impressed.

### In July

The July general meeting will be held on Saturday, July 9, which is not our usual day. It still will be at 10 a.m. in Room 100, Building C, Fort Mason, San Francisco. [Due to the earlier date of the meeting, the July Cider Press will probably not reach you before the meeting.]

Phil Praesek of Praesek Computer Systems will demonstrate *SXR Plus*, and Applesoft program cross-referencer. It produces a listing of all variables, numeric constants, quoted literals and cross referenced line numbers in sorted order, followed by the line numbers on which they

are referenced. Extensive tailoring facilities are provided. Output can be directed to the normal screen, a *Videx Videoterm* 80 column card, or a 40 to 80 column printer.

Two demonstrtions by Apple Core members round out the July meeting. Don Scellato will demonstrate *SuperText 40-56-70* and Joyce Conklin will show *DataFax*.

*DataFax*, from Link Systems, is an open-form database which will allow you to store information in any format which you want, including paragrpahs. It is especially designed for this latter mode, although you can design a format by deciding the line to be used for each type of field. The demonstration will include explanations of the requirements of the system, the method for making back-up copies, and the use of the many indexing and search features. These will be shown using the demonstration database which is a part of the package, as well as a demonstration of other examples created by the user.

*Super Text 40-56-70* is produced by Muse Software, Inc., of Baltimore, Md. This word processor is an inexpensive product which provides the user with 40, 56, or 70 column screen displays without the benefit of a video expansion card. The program gives full word processing capabilities such as headers, footers, file linking, block movement of text, search and replace, and even font design capability to name just a few features. It can be configured from the program disk for a large variety of printers.

### In August

Save August 20 because you won't want to miss the August speaker. This meeting should answer everything you ever wanted to know about Apple video. Included will be such topics as the differences between composite and RGB color monitors, what to look for in each, and why you should care.

The speaker will be Walt Brodner of Video 7 in Saratoga, which manufacturers an RGB peripheral for the Apple //e. Walt used to be with Apple Computer, Inc., and he designed the Apple //e and its 80 column cards. [It's his initials "WFB" on the //e motherboard.] More on this in the next Cider Press.

### Kid's Corner

The June meeting should feature the kid's corner upstairs (with the sales table). Bring your children. They might also enjoy the demonstration of *The Illustrator*. If they or you want, you might have them bring one of their favorite programs to show to the other kids. I would appreciate someone volunteering to help oversee this corner. Please call me at 933-4435 (evenings) or 557-1250 (days) if you can help.

## *May Meeting*

# No More Sitter

By Bill Neff
Recording Secretary

Playing before an audience of about 140 ladies, gentlemen, children, and computerists, Mike asked for reports from our editor-in-chief, Allan and all-around-marketeer, visicalcer and what-ever-else, Don. Get your articles in within the week after the meeting. Get your programs in any old time.

How about helping out in the purchasing-marketing department. Important fringe benefits. Our officers are dedicated and await your call. Hey, why don't you join in on the Saturday after fun and help eat pizza, play with computers AND paste up the CIDER PRESS. It is also educational.

You are here to learn so join an interest group and learn. Check elsewhere in this issue for names, dates, and places. If you are remote to San Francisco, check for the local sub-group right next door. Also, check the list for new groups and start your own. Nu'ers is for anyone with questions or ideas as well as the brand new Apple owner (less than 5 years). (Where IS the "ON" switch?)

### Bank Street Writer

Rick Whittaker of Broderbund showed us why Bank Street Writer has made headlines. It seems to be a very well planned, extremely simple, self-instructing letter writer without any frills. It is certain that complete novice will have it up an running in a very short while. It is very easy to do thorough editing.

To keep it super simple it has few print options, but will support columns up to 128. It has a both a utility pac and tutorials on the back of the disc. Comes with backup disc and easy replace, life time guarantee. About $70 retail, discounts available. Try it, it's easy. Maybe the kids will write their thank you notes.

Rick also revealed a new, funny, wild arcade game: SMALL CHANGE about an arcade manager who tries to both bank the proceeds and prevent the zerks from stealing them. Lots of funny animation.

### DesignWare

Sharmon Hilfinger from DesignWare described the professional role of her company in the field of education as consultants, producers, and now manufacturers of eductional software which makes games of learning. She showed SPELICOPTER and CRYPTOCUBE.

Spelicopter uses arcade style to spell scrambled words. Cryptocube is a quessing game contest to correctly guess and add the correct letters to hidden words. Both programs can be loaded with your own words. They have levels of difficulty and seem user friendly (don't bomb). About $40 each.

**Miscellaneous**

1. The Apple Core Bulletin Board needs dedicated equipment. 2. Sell your used Apple II? call 647-4815. 3. Know of a good tutorial for Random Access Files? 4. Don can get bargains for you. Let him know what you want. He can get MicroSci drives now. 5. Send Mike suggestions for meetings: format, speakers, demos, whatever.

6. Fill out the questionaire on Computer Stores for the new bay-area consumer mag "CHECK BOOK". 7. Swap meet at the House of Flowers June 19, only $4. 8. Joyce needs a "computer readiness test" for her students. 9. Sam D. reminds Apple III owners of their spin-off club which meets the Wednesday before out meeting. 10. Dudley is in charge of the magazine lending concession. 11. We need volunteers to have more open hours at the club house.

*Contest Update*

# Prizes Galore

by
Don Scellato

This seems an opportune time to announce which prizes will be awarded in each category of the contest. The following prizes will be awarded to the winners in each of the following categories:

GRAND PRIZE - This prize will be awarded to the best overall program entered in the contest. This prize was donated by Apple Computer, Inc. , 10260 Bradley Drive, Cupertino, California. It is an Apple Disk II disk drive with a controller card.

PROGRAMMING UTILITIES - A prize will be awarded to the best entry which assists the user in his efforts to write, edit, print, or convert programs. This prize was donated by Legend Industries. It is the LEGEND 128K RAM Expansion Card.

HOME APPLICATIONS - A prize will be awarded for the best entry which can be used in the home environment to manage data, finances, or otherwise assist the homeowner or homemaker. This prize was donated by ARTSCI, INC. It is called MAGIC WINDOW II. It is a word processor which provides the user with 40 columns of text on screen, 70 columns of text on screen without a video expansion card, or with 80 columns of text on screen with an expansion card.

EDUCATION - A prize will be awarded for the best entry which teaches a specific topic to the user or assists the educator in his teaching efforts. This prize was donated by Apple Computer, Inc. It consists of two items. The first is a copy of Apple LOGO, a language which teaches the principles of programming and utilizes Turtle Graphics. The second item is a copy of THE CHILDREN'S TV WORKSHOP which is an interactive teaching program.

MANAGEMENT - A prize will be awarded to the entry which assists the user in the management of a business enterprise. It could be a payroll program, an inventory management program, an investment evaluation program, or any similar application. One prize which will be awarded in this category was donated by Software Publishing Corporation. It is called PFS GRAPH and provides the user with impressive business graphics capability. Another prize which will be awarded in this category was donated by Apple Computer, Inc. It is called DOW JONES NEWS AND QUOTES and provides the user with access to stock market data through the use of a Modem. It also evaluates the data acquired.

GAMES AND ENTERTAINMENT - A prize will be awarded for the best entry which consists of a game or other program which entertains the user. A major manufacturer of game programs has been approached and is considering donating a game programming utility. This prize will be announced in the next issue of the Cider Press. It will be a program similar to the Arcade Machine. Don't forget that entrants may use such programs as The Graphics Magician or the Arcade Machine to create the game they submit as long as the manufacturer of this utility product is credited on the title page.

SPREADSHEET APPLICATIONS - A prize will be awarded for the best entry which consists of a template or similar application created on one of the major Electronic Spreadsheet programs used by the Apple Computer. This prize was donated by ARTSCI, INC. It is a copy of their newest spreadsheet program called MAGICALC. This program provides the user with such features as a 70 column screen display without a video expansion card, 80 column display when a video expansion card, variable column widths, and many other useful features.

GRAPHICS AND SOUND APPLICATIONS - A prize will be awarded for the best program which allows the user to access the graphics and sound capabilities of the Apple Computer. This prize was donated by Southwestern Data Systems. It is The Routine Machine, a collection of programming uitilities.

Programming Contest Rules and Programming Contest Entry Forms were provided in

earlier editions of the Cider Press. If you need additional copies, call the Clubhouse and ask Susan to send this information to you. Don't be bashful. You've probably written some application which you found useful. Share with others. Nothing is inconsequential. We won't make fun of any entries. Send your entries to the Clubhouse. Drop them off there if you drive by. Give them to me at a meeting. If you want some ideas, think about the following applications.

Wouldn't you like to have the following programs available for use with your computer ?

1. HOME PROJECT ESTIMATOR - a program which allows you to calculate the cost and materials required to build a deck or an addition.
2. SHAPE TABLE READER/WRITER - a program which allows you to create and use shape tables easily.
3. SOUND GENERATOR - a program which allows you to generate music or sound effects easily.
4. RECIPE HANDLER - a program which allows you to file recipes conveniently and to increase or decrease the ingredients to suit the number of people being fed.
5. NUKE 'EM - a game which allows you to take out your frustrations vicariously on the guy who cut you off on the freeway last night or the guy who parked so close to your car in the parking lot that you had to slide across the passenger seat and got tangled up with the gear shift.
6. CLASS PLANNER - a teacher's class material planner.

The ideas presented above are only a few hints for you. Better get to work, time is running out. The contest closes on July 31.

# To Market To Buy a What

## MARKETING DEPARTMENT NOTES

by
Don Scellato

The Marketing Department has been working on some new products which will be introduced at the June meeting of the San Francisco Apple Core. The first product was provided by the International Apple Core to its member clubs. This product is called IACBASE. It is an excellent DataBase Manager written in run time PASCAL. This DataBase Manager will be offered to club members for $15. The second product was also provided by the IAC. It is a disk containing a Machine Language Programming Tutorial and Machine Language Programming Utilities. This disk will be sold for $10. The last product to be introduced in June is SFAC 1983 - Disk #2. This disk will contain a variety of games, utilities, home applications, and education applications. It will be sold for $7.50. Documentation for these products will be available at the meeting.

A number of other products are being prepared for use by SFAC members. These products include a number of new PASCAL disks, a printer utility disk, and another disk containing VisiCalc templates.

The Marketing Department is still seeking volunteers to operate booths at swap meets and small computer shows in the Bay Area. If you are interested, contact me at the next meeting.


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# Blaising a Trail

By Max J. Nareff

The following program demonstrates a unique method of string manipulation. It is based on two types of operations. One uses the intrinsic FILLCHAR procedure, where the parameter may be of any type since no range checking is done.

FILLCHAR (Destination,Length,Char)

Destination is the so-called "typeless" parameter. Length is an integer. Char is a single character, or an integer. The procedure fills memory with length number of "characters" starting from destination.

The second basis of the demonstration is the location, in the zero subscript of the string variable, of the length of that string. It is kept as an 8-bit unsigned integer in the range 0..255. Since range checking is done here, the compiler option must be harnessed.

```
(*  Draws  a line of specified  size  and
content *)
PROGRAM DRAWLINE;
 VAR
  LINESIZE     : INTEGER;
  CH           : CHAR;
  LINE         : STRING;
 BEGIN
  PAGE (OUTPUT); (* Clears screen *)
  WRITELN ('How long a line? ');
  READLN (LINESIZE);
  WRITE ('What character to make the ');
  WRITE ('line? ');
  READ (KEYBOARD, CH);
  (*$R-*) (* Range checking off *)
  (*  Placed  specified  length  in  zero
subscript *)
  LINE[0] := CHR (LINESIZE);
  (*$R+*)
  FILLCHAR (LINE[1], LINESIZE, CH);
  WRITELN;
  WRITELN (LINE)
 END.
```


References:

*Apple Pascal Language Manual*, 1980 Apple Computer Co., pg. 53.

*The UCSD Pascal Handbook*, 1982 Clark & Koehler, pg. 68.

*Pascal for the Apple*, 1983 I. MacCallum, pg. 482.

"Practically Pascal", *InCIder* May 1983, J. Stephenson.


By Max J. Nareff

There are several ways of using the computer as a typewriter. One of the simplest of these is by operation of the F(iler and T(ransfer commands. Answer the prompts as follows: "CONSOLE:, PRINTER:." Then type away, including carriage returns. When ready to print, power-up the printer and type Control/C. This can be useful for memos and addressing envelopes.

■■■■■■■■■■■■■■■■■■■■■■■■■■

In the recent review of the new "Journal of Pascal and Ada," the address was inadvertently omitted. The address is:

Journal of Pascal and Ada
P.O. Box 384
Orem, Utah 84057

■■■■■■■■■■■■■■■■■■■■■■■■■■

```
########################################
#                                      #
#          AUTHORS WANTED              #
#                                      #
#  Share your experiences, Apple       #
#  programming hints,pascal tips,      #
#  software reviews. Send your         #
#  material to the Cider Press         #
#  Editor at the Clubhouse.....        #
#                                      #
########################################
```

# B*A*S*I*C

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With summer finally approaching, it's time to exercise so you can fit your Apple bikini; with all the subjects we've covered this year, you should be able to do swimmingly! If Herb Caen can write a column of seemingly unrelated items, so can I - this month will be such a column, although they will all still relate to BASIC programming.

. . . . . (That's "five-dot journalism", not three)!

. . . . .

Some time ago I asked in a general meeting of the San Francisco Apple Core if anyone knew of a published test which could be administered to high school students to determine their readiness or aptitude for programming. One member said that the U.S. Air Force used one, but upon further investigation he found that said test was not available for use outside the USAF. Maybe someone in my vast(?) readership knows of such a test. We would like to have one to use at school, rather than taking the path of least resistance and setting up a pre-requisite of a certain level of mathematics achievement for enrollment in a programming class. While success in Geometry is a good predictor, because of the logical thought processes which are learned in that class, it is by no means the only one. We have had students who are excellent programmers who did not do well in Geometry at all, or who had never taken it. It really depends upon motivation, but I have never heard of a reliable test instrument to measure that either!!

. . . . .

In the same issue I also asked another question which has yet to generate a response. It was: Is there a subroutine that you know about which will allow you to calculate to 16-18 significant figures instead of the usual limit in Applesoft of 9 significant digits?

. . . . .

In the first article which I wrote (Feb. 1982) I used a "fix" for the random-number generator, which in the APPLE(r) is not truly random. Recent conversations with members indicate that perhaps it might be a good idea to repeat this item. If you have a line at the beginning of your program like the one below, you use keyboard count locations (78 and 79) which are quite likely to be random in the order in which they are pressed.

```
10 X = RND(PEEK(78)+PEEK(79)*256):
     X = RND (-X)
```

. . . . .

In addition to the short program which went with the above hint, there have been the following columns about programming in the Cider Press:

REM Statements ..... Apr-May '82
PRINT formatting on screen ... Jun '82
Double-check on INPUT..... Jul '82
Beginners' Questions ..... Aug '82
TAB, VTAB, HTAB ..... Nov-Dec '82
PEEK and POKE ..... Jan '83
CALLS; Arrays (1-dimens.) .....Feb '83
2-Dimensional Arrays ..... Mar '83
Flow-charting ..... Apr '83
Sorting Algorithms ..... May '83

. . . . .

One of the student aides in our programming class came up with a program to generate a Pascal's Triangle (yes, the same Pascal for whom the programming language was named). For the refreshing of your memory, a Pascal Triangle is developed by having each number in the line be the sum of the two above it, like this:

```
          1
        1 1
      1 2 1
    1 3 3 1
```

etc.

While the first "1" is obviously NOT the sum of the two (invisible) zeros above it, you have to start somewhere! In the second line, each "1" is the sum of the first "1" and an invisible zero. In the second line, the "2" is the sum of the two "1's" above, etc.

The program below is written to run on an Epson MX-80 printer, which has the maximum of 132 horizontal spaces. If you have access to a printer with wider paper, you can print more than 23 rows.

```
5 REM PASCAL TRIANGLE
10 REM BY DAVID P. HESPELT
20 REM 20 MAY 1983
30 REM TRANSLATED FROM TRS-80 TO APPLE
      BY JOYCE CONKLIN
40 DIM A(25,25)
50 TEXT:HOME
60 VTAB 12: HTAB 14: FLASH: PRINT
   "LOADING ARRAY"
70 FOR X = 1 TO 23
80 A (X,X) = 1: A(1,X) = 1
90 NEXT X
100 FOR Y = 3 TO 23
110 FOR X = 2 TO Y-1
120 A(X,Y) = A(X,Y-1)+A(X-1,Y-1)
130 NEXT X: NEXT Y
140 NORMAL: TEXT: HOME
150 PR#1: PRINT CHR$(15): PRINT
160 FOR Y = 1 TO 23
170 FOR X = 1 TO Y
180 A$ = A$ + STR$(A(X,Y))
190 A$ = A$ + " ": REM SPACE BETWEEN
    QUOTES
200 NEXT X
210 PRINT TAB ((132 - LEN(A$))/2);A$
220 A$ = "": REM NO SPACE BETWEEN
    QUOTES
230 NEXT Y
240 PRINT CHR$(18):PR#0:END
```

Lines 70-90 load the "edges" of a triangular array with ones. (Draw it out on paper to see what I mean.) Lines 100-130 load the rest of the array with sums obtained in much the same manner as described above. All the while this is going on, Line 60 lets you know that the computer hasn't gone on an early vacation! But enough is enough - to get rid of the flash, you use the NORMAL in line 140. Lines 150-240 allow you to print out the triangle on your printer, with the first line (one "1") centered on the page.

When you have done all this you will see that the edges of the triangle have curves, caused by the increasing length of the numbers as you approach the bottom of the triangle. After about line 9 this makes it a bit difficult to see the relation of each number to the two above it. You can set it up so tha each number, regardless of size, will take up the same space as the largest number in your set; the trade-off is that you can only print 16 lines of te triangle before running out of space on your paper (the 132-character limit for horizontal lines.) If you want to have this nicer-looking but shorter triangle, make the following modifications to your program.

Change lines 70,100, and 160 so that the maximum for the loop is 16 instead of 23.

Add line 175:

```
175 B$ = STR$(A(X,Y))
```

Change line 180 to:

```
180 A$ = A$ + B$ + LEFT$("      ",
        (6-LEN(B$)))
```

There are five spaces between the quote marks above.

Delete line 190

. . . . .

Allan Woods, the editor of this august (June?) publication, is a true 20th century renaissance man, conversant with many different topics; he even talks to children! Which is where this next item came from... one of his friends' child had a problem from school concerning perfect numbers. Perfect numbers are those which have factors (less than the number) which add up to the number itself. For example, the factors of 6 are 1,2, and 3; the sum of 1,2, and 3 is 6. Now for the computer connection. Can you design a program which will print out the perfect numbers? The brute-force method (divide each number by each of the numbers smaller) will do it but you may tie up your computer for the next century doing it! Work on a more elegant method, which will limit the maximum size of your divisor, to limit the time for each loop. I will publish Allan's solution next month.

. . . . .

One of the benefits of teaching is that you get examination copies of texts in your area; some are good and some are not. One of the good ones which I received recently was GRADED PROBLEMS IN COMPUTER SCIENCE by A. D. McGettrick and P. D. Smith, published by Addison-Wesley. The approach of the authors is to provide a series of problems which are as machine-independent as possible, and which will be listed in order of difficulty. The first few should be able to be solved by anyone with a beginner's knowledge of programming; the later ones will challenge even the experts. Since we discussed screen formatting a year ago, and you have been practicing ever since, try these two on for size; they are in the first chapter, which concerns straight-line programs -- no loops, no conditional (IF-THEN) checks, no subroutines, etc.

Remember to use appropriate messages, labels, etc. on your output screen.

1. Show how to convert automatically from centimetres to metres and centimetres by writing a suitable program.

2. A farmer has a field B metres wide, L metres long. The field yields C cubic metres of grain per hectare (1 hectare = 10000 square metres). The farmer has a number of cylindrical grain silos, R metres in radius, H metres in height, in which he stores the harvest. Write a program which reads B, L, C, R, and H, and outputs...

i. the number of completely filled silos

ii. the height of grain in any unfilled silo.

(To refresh your memory, the formula for the volume of a right circular cylinder is 3.14*R↑2*H; neglect any additional space available due to the peaked roof. (do you know the formula for the volume of a cone? I don't))

*(ed. note: Cone - - V=1/3πr²h)*

. . . . .

Those of you who purchased Apple II+'s received a tutorial manual; those who bought the //e did not get this as part of your package, but it is available from APPLE, Inc. (reorder #A2L0018.) In there, you learned to draw orange horses with purple feet, and other such creatures. The lo-res graphics screen of your APPLE will accomodate 40 blocks of color in each direction, and will display 15 colors, including black (two of them are grey, #'s 5 and 10). The commands required to draw pictures using these blocks include GR (to set the graphics mode), PLOT X, Y (to locate the block) and COLOR = # (to determine the next color to be used.) Don't forget to replace the # sign with a number from 1 to 15! Of course, you could draw a line by setting each block individually, but that would really be tedious. How about using a FOR-NEXT loop? For example, to draw a horizontal orange line in the middle of the screen using a loop, you could write...

```
10 COLOR = 9
20 FOR X = 0 TO 39: REM THE NUMBERS GO
                    FROM 0 TO 39, NOT
                    FROM 1 TO 40
30 PLOT X, 12
40 NEXT X
50 END
```

(If you have read your tutorial manual completely, you will realize that you can also do it by "HLIN 0,39 AT 12" but I am leading up to a problem for you to work on.)

You might think that to draw a diagonal line you would need a pair of nested FOR-NEXT loops, but that will not get you the result you desire. Try the following to see what happens!

```
10 FOR X = 0 TO 39
20 FOR Y = 0 TO 39
30 PLOT X,Y
40 NEXT Y: NEXT X
```

I sure hope you like the color you chose, because you have a lot of it! No, you must use one loop, and adjust the variables. To draw a line from upper left to lower right, you would use...

```
10 FOR X = 0 TO 39
20 PLOT X, X
30 NEXT X
```

Now for the problem: Can you design a program which will draw an X (Think! How are you going to draw the line that goes from lower left to upper right?) from corner to corner and surround it with a box outlining the 40x40 area of the lo-res graphics screen? Can you do it all inside ONE FOR-NEXT loop? Play around with this; change colors in the middle if you want. I will print my program next month. Hope you have a pleasant summer; I can hardly wait for mine to start so I have some time to work on rewriting my curricula for next year! (Doesn't that sound like fun!?!?!) This column will keep me in shape - I may share with you some of the programs we ask the students to write during the year.


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# Call the Assembly to Order

INTRODUCTION TO ASSEMBLY LANGUAGE PROGRAMMING

CHARLES R. SMITH

Reprinted from: THE MAPLE ORCHARD
BOX 696, STATION B
WILLOWDALE, ONTARIO

## WHAT IS ASSEMBLER AND MACHINE LANGUAGE ?

Most of us have some familiarity with BASIC, with its English-like commands such as 'PRINT', 'INPUT' and 'FOR .. NEXT'. There are other high-level languages, like Fortran and Pascal, which similarly are formed of English like commands. The Apple's central processing unit (CPU) cannot understand such English commands, but instead the CPU must 'interpret' the commands or 'translate' them into a form which it can understand. When running a program in BASIC, the Apple takes each line of the program and interprets it into a machine language form which for the CPU. Once interpreted, the CPU then executes the line. Applesoft is therefore called a 'BASIC Interpreter' or is an 'interpreted BASIC'.

The opposite of the high-level, structured languages are assembler and machine language. The terms 'assembly language' and 'machine language' are often used interchangably, although there is a difference. Programming in machine language is accomplished when hexadecimal or binary data is loaded into the computer byte-by-byte (eg. entering the Monitor by CALL -151 and inputting '300: A9 0A ...'). When computers were in their infancy, this was the only option available. This form of programming can only be intelligible to people who think like a computer. To we lesser mortals, writing a program in machine language is the ultimate exercise in frustration. (An aside: when Steve Wozniak and Steve Jobs first built an Apple I computer, they took it to parties and entered hundreds of hex codes by hand just to load in a program to demonstrate this first Apple's ability. Allegedly, DOS was first written this way!)

Enter Assemblers. An assembler is simply a tool which allows a person to write a program using somewhat more intelligible commands, and then the assembler program converts ("assembles") the English-like commands into the corresponding machine-language code.

While there is a definite and significant difference between 'assembly' language and 'machine' language, the two terms are often used interchangably. Throughout this article, such interchangability shall be used.

## WHY PROGRAM IN MACHINE LANGUAGE ?

If assembly language is tougher than BASIC, why bother being a glutton for punishment? Is there something to be said for such an arcane language? Consider these three reasons: speed, flexibility and memory management.

The most prominent benefit of a machine language program can be seen anytime you play a commercially-produced, arcade style game. Such games are invariably written on an assembler (the people at Southwestern Data Systems tell me that the games from Sirius are written on Merlin). The execution speed of a machine language program is much faster than a corresponding BASIC program - arcade quality games simply cannot be written in BASIC. Even BASIC which has been compiled into machine language (by Applesoft compilers such as TASC or Speedstar) is still slower and more memory-hungry than an equivalent program written in assembler. The advantage of speed can be used in other situations which will significantly enhance the Apple's capability. Sorting, matrix operations and disk utilities are but a few reasons to use the speed of machine language.

The second reason to program in machine language is the increased flexibility which it offers. The commands in Applesoft can be enhanced by the use of short machine language routines hidden away in memory. Print formatting functions, sound generation, sorting, string handling and swapping,

decimal to hex conversions, garbage collection and memory clearance, and array operations are but some of the more commonly used subroutines. While such machine language enhancements are available commercially, they can also be had at a very low cost, as they are listed in such publications as Nibble and Call-APPLE.

The third advantage relates to memory management. Machine language programs are more efficient in their comsumption of memory than are their BASIC counterparts. Because of this, it is possible to have several machine language routines residing in memory cuncurrently, thereby enhancing Applesoft while at the same time avoiding a significant reduction in the memory available to the user.

## WHAT IS NEEDED TO GET STARTED

To begin programming in assembler/ machine language, it is not necessary to purchase any software tools. A good book, however, can be invaluable. Once your interest is sparked, you may develop a sudden urge to purchase an assembler. Other machine language utilities are helpful.

There are three different levels of sophistication at which you may enter machine language programming:

1) machine language using the Monitor
2) assembly language using the Mini-Assembler
3) assembly language using an assembler.

Let's look at each of these in order.

## MACHINE LANGUAGE USING THE MONITOR

Although not the most flexible approach to machine language, this is the cheapest route to go, and it forms a good starting place. The way to begin is to exit Applesoft and get into the Monitor by means of the command:

```
]CALL -151
```

which yields the '*' prompt.

From here we can enter a program by giving the starting address and the hexadecimal data. Try the following:

```
*300:AD 30 C0 88 D0 FD 4C 00 30 <ret>
```

where you entered the number 300, a colon, then 9 sets of hexadecimal data. Be sure that you do not leave a space between the colon and the first number. At the end of the line, enter a <carriage return>. Up to 85 hexadecimal numbers can be entered at once this way.

What this program does is toggle the speaker by addressing its memory locatio (AD 30 C0), counting downwards from 255 to 0 (88 D0 FD) and then jumping back to the start (4C 00 30). In other words, this short routine keeps a constant tone going on the speaker until you hit <RESET> to get out of it. To start this cprogram once you have typed in the above line, simply go to location $300 and do what's there by the command:

```
*300G <ret>
```

You have just entered your first machine language program (this program example is courtesy of SC Macro Assembler).

Now go on to greater things. Grab an assembly/machine language listing and enter it into your computer. If you are entering an assembly listing, you will see the hex code in the left hand columns. For example, the above program looks like:

```
0300 - AD 30 C0   1 TONE LDA $C030
0303 - 88         2 LOOP DEY
0304 - D0 FD      3      BNE LOOP
0306 - 4C 00 03   4      JMP TONE
```

Remember to save your work on disk. This is done with the BSAVE command. It is necessary to specify the starting address and length parameters using the 'A$___' and 'L$___' commands. If a program went from 0300 to 0320, it would be (hex) 20 or (decimal) 32 bytes long. Therefore it

would be saved by the command:

*BSAVE MYPROGRAM,A$300,L$20

where A$ is the starting address in hexadecimal and L$ is the length in hex. It could also be saved by the command:

*BSAVE MYPROGRAM,A768,L32

where A is the starting address in decimal (768=300 hex) and L is the length in bytes.

To check a program listing, enter the start and end address, seperated by a period. For the short TONE program above, enter:

*300.308 <ret>

If you want to see the disassembled code, enter the starting address and "L" to list 20 commands. To see this program, enter:

*300L <ret>

(To make the entry and correction of machine language programs, one of the disks from the International Apple Core (Disk 25, Machine Language Utilities) contains a utility to facilitate this process. It is called BEU (for Binary Entry Utility) and will locate itself either on a 16K RAM card or in the Apple's 48K RAM.)

PROGRAMMING WITH THE MINI-ASSEMBLER

In the original Apple II machine was a monitor function entitled the "Mini-Assembler". Its job was to facilitate entry of machine code into the computer. When Applesoft was developed for
the Apple II Plus, this function (along with STEP and TRACE in the Monitor ROM) were deleted. That is the bad news. Now for the good news. If you have a 16K RAM card, loading Integer BASIC upon booting up the DOS 3.3 SYSTEM MASTER disk will load the Mini-Assembler into your machine. This can be accessed by entering Integer with the command:

]INT

which yields the '>' prompt. Then enter:

>CALL -151

to get the monitor '*' prompt. Then go to the Mini-Assembler with the command:

*F666G

which yields the exclamation (!) prompt.

The Mini-Assembler is still available to the owner of a 48K Apple ][ Plus, as it has been modified and included on the IAC Disk #25. Instructions for its use are given in an accompanying file, while more complete instructions are given in the APPLE ][ REFERENCE MANUAL. Apple //e owners can access the Mini-Assembler through Integer BASIC.

3) ASSEMBLER

Once you've gotten your feet wet by gaining access to the Monitor and entering a hex listing, you will realize the fact that there has to be a better way. Obtaining an assembler is that way. There are at least ten commercially available editor/assemblers, and the perfect one is probably still to be written. Buying an assembler is like obtaining any other software, as the amount of money to be spent and the configuration of your machine will be controlling factors. Several assemblers are reviewed in this issue. A public domain assembler called MASM is included in the IAC's special Machine Language Utility disk.

OTHER AIDS

Other types of aids are also worthy of consideration. A disassembler is a handy tool which will permit you to take machine language (hexadecimal) code and re-convert it into an assembler source listing. From there, you can edit, alter and re-assemble the code to make it function in a different manner or at a new memory location. A disassembler is available in the Apple's monitor and is

able to disassemble to the screen, using the

*XXXX L <return>

command, where XXXX is the memory location at which to begin disassembly. A public domain disassembler is included on the machine language disk, and some very good assemblers are included with some assembler as part of the package (eg. Merlin and Lisa). Others are available as a stand-alone product (such as DISASM from RAK-WARE).

Debuggers are for those who are very serious - they permit step and trace functions and a host of other advanced features. Two examples of commercial products are Bug Byter and Munch-a-Bug. BEU on the machine language disk also contains debug routines.

There is even a new product which will turn your machine into a 'visible' Apple as it shows you on the Hi-Res screen how your Apple works, displaying the instructions, registers, flags and memory locations as it executes a program one step at a time.

And where would we be without books? A variety are available, each one for a slightly different reader. There are some general references on programming the 6502 microprocessors, several good books specifically written for Apple 6502 machine language (reviewed in this issue), and books which serve as a road-map or atlas to the Apple's internals (also reviewed here). Much is written in the monthly magazines, and there is even a monthly publication on machine language progamming. But the best starting place is the APPLE ][ REFERENCE MANUAL, which lists the opcodes available on the 6502 and some important internal routines.

When all is said and done, a person who knows a few BASIC commands can easily find their way around machine language. There is a certain joy in entering, debugging and running a program, be it in BASIC, assembler or whatever. And isn't that joy a big reason for owning an Apple?

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GLOSSARYONE (c)
by Mike Iversen
#1 Jo-lin Ct.
El Sobrante, CA 94803
Price: $17.95

A Review by Joyce Conklin
Copyright (c) 1983

GLOSSARYONE is a utility program designed to make the use of AppleWriter II with your Epson printer almost painless. What is does is to have a glossary file of all the printer commands, which you load when you boot your AppleWriter II. Then the imbedded printer commands are available simply by pressing CTRL-G along with a mnemonic for your desired command. It doesn't sound like much, you say? Well, let me tell you, as a long-time AppleWriter user who was limited to capitals for emphasis (until I got my Graftrax+ chips!) the ability to use italics, underline, double-strike, emphasized, super- and subscript, and all the other bells and whistles of the Epson is a real joy. It's taken away the pleasure of my students, though; one of their joys was to find the ommissions of superscripts which used to require hand-written insertion after the original was printed before duplication for the whole class.

Iverson has gone to tremendous effort to make the utility easy to use, designing the mnemonics to remind you of the function. For example, to imbed compressed print, type CTRL-G, ESC-C; to turn off the compressed print, type CTRL-G, c. There is also the ability to print some of the special characters:

```
|
{
}
```

...e one problem with this is a failing in AppleWriter, not in Glossaryone. AppleWriter recognizes control characters as characters for the purpose of counting spaces, although it does not print the control characters on the hard copy. This means that if you italicize (for example) one word in a line, the right margin in the fill-justify mode will be several spaces short of where you think it ought to be. If you write in the left-justify mode, this will not be a problem; even so, it's a small price to pay for all you get.

In addition, the support for this program is very good. The one disk comes with files for MX without Graftrax, MX with Graftrax-80 and MX with Graftrax+. A version for the Fx series of printers is in the works, as is a version with other special characters. You may have seen an announcement for this product in the Apple Orchard which listed the price as $12.95 -- not so! Even at $17.95 (the current price) this program is WELL worth it for those of you using the AppleWriter II/Epson MX combination.

*Epson Salts*

# Dumping It

(C) 1983 by Michael Fischer

**To Kathy**
**Who Started It All**

[Note: This series of articles on occasion uses hexadecimal numbers. This is neither because I have eight fingers on each hand (although my typing looks like I do) nor because I want to sound erudite (whatever that means). Some of the concepts in this series, especially in later parts, require the use of hexadecimal numbers.

Decimal numbers are the common 10 numbers, 0-9, that we are used to. For reasons too boring to mention here, the Apple computer likes 16 one digit numbers (0-9 and A-F) between 1 and 10 rather than 10.

Throughout this article I generally refer to decimal numbers followed, when necessary, by the hexadecimal equivalent, in parentheses, preceeded by a dollar sign ($). E.g., "This is found in location 1024 ($400)."

Further information on hexadecimal numbers can be found in most good introductory books on assembly language programing.]

## Down in the Dumps

A "dump" is jargon for a paper-printed copy of whatever is on the computer screen. A hires screen dump will print whatever picture is on the high resolution graphics screen, while a text screen dump will print whatever text is displayed on the text screen.

About eight months ago, during an Epson Printer interest group meeting, a deceptively simple question was asked: "Is there any program that will dump the text screen to the printer?"

"Of course," I answered. "I'll have one by next month." This series of articles describes the six month saga that eventually led to the (nearly) completed dump program presented at the end of the series.

## It's So Easy

"All" you need to do for a text dump is find out what character is located at each position on the text screen and then print that character on the printer. Start with the first line of the screen, print the 40 characters on that line followed by a carriage return (to advance the paper one line), then print the next line, and so forth until all 24 lines are printed.

But how do you find out what is on the screen? The Apple text screen occupies most of memory locations 1024 to 2047 ($400-$7FF). When a character is displayed on the screen, its ASCII value is placed into the memory location corresponding to the line and column on the screen where the character is to be displayed.

## ASCII and the Gremlins

*[ASCII is an acronym for American Standard Code for Information Interexchange. Under the ASCII code as implemented on the Apple, each character has a particular number value associated with it. See the Apple II Reference Manual, p. 15, for a listing of each character and its ASCII numeric value. Its the job of the 23 gremlins who live under the reset key to convert that number into a T.V. signal that puts that letter on your monitor screen.*

*Actually the ASCII code is anything but "standard". On some computers the 128 ASCII codes range from 0-127. On others (Apple included), they range from 128-255 with 0-127 reserved for other uses. Thus "A" has an ASCII value of 193 on the Apple while a flashing A has an ASCII value of 65.]*

In BASIC, a "PEEK <memory location>" command looks at a particular memory location and finds out what number is there. A statement "LET J = PEEK(1024)" will set the variable J to whatever value resides in location 1024. Since 1024 is row 1, column 1 of the Apple text screen, J would be the ASCII value of that character. If the letter "A" is at the top left corner of you screen, J will be set to 193 (the ASCII value of A).

## Poking Around

This can be shown by setting location 1024 to 193 and seeing what happens. To do this we use the BASIC command "POKE <memory location>, <value>". To try it, enter the statement "POKE 1024, 193 <Return>" and see what appears in the top left corner of your screen. Try it -- and try any other number between 0 and 255 and see what appears. (Go ahead. I'll wait while you have fun.)

Now all this would be easier if the Apple text screen was sequentially arranged beginning at location 1024. But the people behind the Apple didn't want to make things too easy for us. So they made the screen display locations jump about. (Actually this has something to do with preventing a jumpy display image.)

Locations 1024 to 1067 ($400-$427) are line 1 of text. Locations 1068 to 1107 ($428-$449) are line 9 of text. Locations (1108 to 1147 ($450-$477) are line 17 of text. The next eight locations are skipped (memory lapses?) and we then move to line 2 beginning with location 1152. All this makes perfect sense if you have eight fingers on each hand and a brain like a television picture tube.

### Dumping It

To dump the text screen to the printer, then, merely requires the BASIC program

```
60000 PRINT CHR$(4)"PR#1" : REM Turn on the printer
60010 FOR I = 1024 TO 1920 STEP 128 : GOSUB 60060 : NEXT I : REM The first 8 lines of text are 128 memory location after each other beginning with 1024
60020 FOR I = 1064 TO 1960 STEP 128 : GOSUB 60060 : NEXT I : REM The same is true of the next eight lines
60030 FOR I = 1104 TO 2000 STEP 128 : GOSUB 60060 : NEXT I : REM And the last eight lines
60040 PRINT CHR$(4)"PR#0" : REM Turn off the printer
60050 RETURN : REM Go back to the regular program
60060 FOR J = 1 TO I+39 : REM Go through all 40 spaces on the line
60070 C = PEEK (J) : REM Get number in that screen location
60080 PRINT CHR$(C); : REM Print the character whose ASCII value is that number. Note the semicolon to keep the printer from printing a line feed after each character.
60090 NEXT J
60100 PRINT : REM Do a line feed at the end of the screen line
60110 RETURN
```

Now all you have to do is go through your program, locate every input statement, and insert the statement

"IF ASC(<Input>) = 10 THEN GOSUB 60000 : GOTO <Input Statement Line Number>"

### A Small Problem

Oh, you've got a program with 1000 lines of code and don't want to go through it looking for input statements? Beside, you want this routine to work with any Applesoft program, as well as at the command level? And you don't want to modify every program for it to work? Well, why didn't you say so? It'll just take a little effort to modify the program. But you'll have to learn a little assembly language along the way. (Don't worry, it won't hurt.)

Can you hold on until next month?

# Which Epson is It

By Michael Fischer

o you have an Epson MX printer? Is it a lain MX, an MX with Graftrax, or an MX with Graftrax$^{PLUS}$? Here's an easy way to find out.

Type the following from Applesoft:

```
]PR#1
]PRINT CHR$(27);CHR$(83);CHR$(0);"HELLO"
```

If the printer prints

1) SHELLO (normal sized), you have a plain MX;
2) **HELLO** (expanded), you have an MX with Graftrax;
3) $^{HELLO}$ (superscript), you have an MX with Graftrax$^{PLUS}$

# Feed a Printer

By Michael Fischer

.ine feeds can be controlled three ways when sending text to the printer. The sources of the line feeds, and how to control them, are:

1. The computer itself. Program with semicolons after print statements to suppress line feeds.

2. The interface card. Most Centronics type parallel interfaces toggle the line feed off and on with a Control J + K. [PRINT CHR$(9);"K"] Check your interface card manual for special cases.

3. The Printer. In plain Epsons set dip switches 1-2 and 1-3 to ON to suppress line feeds and OFF to force them. For Epsons with Graftrax set dip swtiches 1-2 and 1-3 as with the plain Epson and also set dip switch 2-3 ON to force line feeds and OFF to suppress line feeds. For Epsons with Graftrax$^{PLUS}$ set dip switch 2-3 ON to force line feeds and OFF to suppress line feeds.

# An Apple for the Teacher

*Reprinted with the author's permission from the April newletter of the Reading - Language Arts Special Interest Group of the California Reading Association.*

Is your mailbox clogged with flyers advertising courses in computer literacy, magazines picturing smiling children at computers with color monitors and double disk drives, catalogs of software programs with wonderful titles but no descriptions of how they work? Yes? Me too.

Now it's obvious from this newsletter that I use and appreciate what my home computer, word processing program and printer can do. It is a useful tool that allows me to change text and format without having to retype the entire piece of writing.

But it seems to me that teachers are being pressured into believing that if they don't "get with it" they'll be replaced by computers. What real impact can we expect from computers in the next few years? Are computers a threat or an aid or neither? In this newsletter and the next, I'd like to explore some of the pros and cons of computers in education. Do students learn more using a computer than traditional instruction alone? Or, in concrete terms, given a thousand dollars for an elementary school, should we by more library books or a computer with black and white monitor, cassette recorder and software on tape (no printer)?

There have been very few studies of computer assisted instruction (CAI) that were adequately controlled. Professor James Kulik, University of Michigan, found that out of 300 studies, only fifty were properly administered so that the results could be considered valid. Articles in computer magazines are rarely unbiased and mere student or teacher enthusiasm is not sufficient to commit enormous sums of money for teacher training and computer equipment; especially when schools are in such financial straits now that they are cutting programs, books and supplies, personnel, and maintenance.

Some schools, school districts, and parents clubs are purchasing computers just because it seems the thing to do. With the push from the business community for computer education, the schools must assume some responsibility for preparing students with the technological skills the job market demands. Students must have knowledge and skill in the use of computers to function anywhere in the business world. In answer to the community pressure, computers are becoming more common in the high school business ed, science and math departments.

Computer Assisted Instruction is a broad term. The most common uses for computers are:

1. Drill and Practice: the students practice skills taught by the teacher.
2. Tutorial Dialog: This type of program typically presents facts, asks multiple choice questions, and provides for response-contingent branching.
3. Management of Instruction: The teacher uses a computer program to record information about students (eg. test scores) and arrange the data for grouping, specific skill instruction, or summaries of progress.
4. Simulation and Model Building: Simulations are substitutes for real experiences involving several variables and requiring problem solving within the "rules". Model building asks the student to discover the rules by which a game, geometric shape, or graph is set up and can be changed.
5. Teaching Computer-Related Information Skills: Using the computer to teach students and have them apply skills such as typing, editing text, and retrieving data.
6. Teaching Computer Programming

The most common use for CAI is Drill and Practice. The proponents of this use for CAI feel students benefit for the following reasons:

1. CAI relates to a mastery learning approach
2. there is high academic learning time
3. the students receive immediate feedback
4. the program provides direct instruction
5. the instruction is consistent, orderly, and individualized
6. records of student progress are readily available
7. students can control the pacing
8. there is no embarrassment for making mistakes

I seem to recall the same things being said for programmed learning and individualized instruction based on diagnosis and prescription.

Where computers have been used for drill and practice over a long period of time--4 years in the Los Angeles study--students showed and maintained growth in math computation. The results were unclear for conceptual math. Students using CAI for reading vocabulary and comprehension did not show increased performance. Whether this was due to variables within the research design or the very nature of reading comprehension is important to study in the future. My own bias is that since reading is an interactive process between a reader and an author, no program can teach someone to comprehend. Most programs have a testing format--read the paragraph, choose the right answer to the questions. A program cannot know what experiences or reading/language capabilities a student brings to the text; and the student doesn't know what he doesn't know in order to comprehend the text. Very, very few programs give feedback to the student regarding a wrong answer.

There surely are reading skills that would lend themselves to CAI. Perhaps the problem so far has been the software. The motivation of using a computer wears thin after a short while. Student comments indicate that most of the drill and practice software programs are boring and repetitious--the same faults attributed to programmed learning.

Most CAI is just tacked on. I know of no reading programs, basal or supplementary, with CAI included as an integral part of the program. A teacher must use discretion about how and when to fit a software program into instruction so that the student using the program isn't required to have knowledge he doesn't yet have. If the student doesn't have the knowledge base, what is the program teaching him but how to press buttons?

Mistakes in purchasing are expensive. We can always get a sample book, but we have to order computer programs sight unseen, only on the basis of advertisements.

There are also the philosophical questions about CAI. Do we want to invest in educational software that exaggerates student learning of facts or getting the "right" answer to someone else's questions? Isn't drill and practice already overused?

In the next newsletter, I'll try to summarize some of the research findings related to other uses of CAI. In the meantime, when you're wondering about the impact of computers as instructional aids, consider the following:

-There are about 45 million students enrolled in elementary and secondary schools in the United States. There are about 2 million classrooms, one hundred thousand schools.

-It is estimated that there is one computer for every 33 to 100 classrooms.

-Even if schools or districts spend one percent of their operating budgets (or half of what is now spent on books) for the next five years to purchase microcomputers and equipment, there will still only be about one computer for every eight classroom by 1986.

One major hurdle is access. Instruction is unlikely to be affected by computers until student access to computer time is greatly increased.

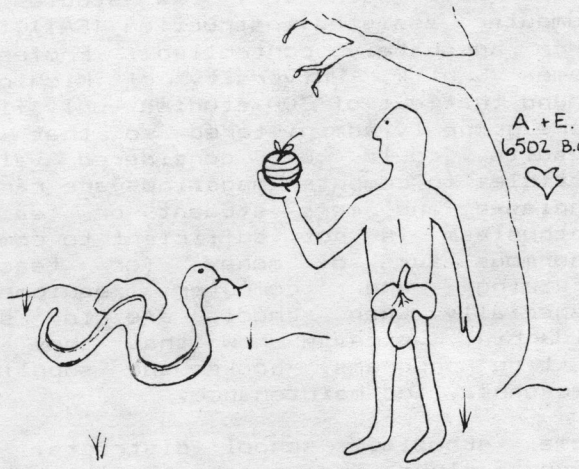
EXIT Carole Woods

For further reading--

Microcomputers in the Classroom--Dreams and Realities , by Henry Jay Becker, Center for Social Organization of Schools, John Hopkins University, Jan.'82.

Computer-assisted Instruction and Compensatory Education , Educational Testing Service/Los Angeles Unified, by Marjorie Ragosta, Paul W. Holland and Dean J. Jamison.

Computers in Education:What the Research Shows , by Gerald W. Brasey, Electronic Learning, Nov. Dec. '82




what do you mean "Take a Byte?"

# Interest Groups

by
Sami Capron

As your new Interest Group Coordinator I have taken on the responsibility of organizing the interest groups. I need to know what kind of interest groups you want.

One suggestion at the May general meeting was that we start similiar groups in Marin, East Bay, South Bay, and San Francisco. I think this is a great idea, but I need volunteers from each of these areas! So, please pick up your telephone right now and call me (388-8631). It doesn't matter that you're not an expert on a particular topic. The only real requirement is that you be willing to donate a small amount of your time to organizing the interest group.

In addition to the groups that have been around for awhile there are several new groups that might interest you. Don Scellato is organizing a Tax Interest Group and another Visicalc Group which will both meet in the East Bay. Call Don at 672-2051 for more information.

In San Francisco a Telecommunications Group will meet at the club house on the fourth Wednesday of the month at 7:30 P.M. Those members who have modems or want information about the use of modems will likely find this a good resource. Contact Frank Fennelly (408-984-7321) for more information.

Marin seems most active this month with three new groups starting up. The Nu'ers (New Users) met for the first time last month with guest speaker Michael Fischer. Michael shared his wealth of knowledge with new and old Apple users. He has been invited back next month to talk more about "The Mysteries of the Disk Operating System." In the coming monthes topics will include printers and software applications. Don Scellato has promised to discuss Spread Sheet programs in the near future.

dBase II Interest Group is scheduled for June 23 at 7:00 P.M. For information about this new group contact Shirley Anderson at 892-0522. Shirley is trying to arrange the use of on-site computers at the Fireman's Fund for her group.

Marin Graphics will have its first meeting on Wednesday, June 8, at the home of Bob Sachs. Contact Reed Harris at 924-7221 or Bob at 332-3331 for more information.

# East Bay Visicalc

VISICALC INTEREST GROUP
by
Don Scellato

The VisiCalc Interest Group held two meetings in May. The first meeting was held at the Clubhouse at the usual time - on the usual night (2nd Tuesday of the month at 7:30 P.M.). The second meeting was the first East Bay meeting ever held by the group. This meeting was held at Breuner's in Pleasant Hill on May 26 from 7:00 P.M. till 9:00 P.M. At the first meeting the group was treated to a demonstration of a commercially available stock evaluation program which runs on VisiCalc. This demo was given by Phil Bernheim. The group also was given a demonstration of A.P.P.L.E.'s THE SPREADSHEET program by Larry Nebron. Both demos were well-presented and interesting to the attendees. The second meeting dealt with VisiCalc file handling procedures, general VisiCalc tips, and a demonstration of VC-MANAGER, a program which allows the combining of VisiCalc spreadsheets in their text file format.

In June, the West Bay meeting will be held on June 14 at 7:30 P.M. at the Clubhouse. The East Bay group is being set up as a permanent feature of the Club for the benefit of its East Bay members. The East Bay meeting of the VisiCalc Interest Group will be held on Monday, June 20, from 7:00 P.M. till 9:00 P.M. at Breuner's Furniture Store which is located at 3250 Buskirk Avenue in Pleasant Hill. The meeting is held in the upstairs Meeting Room which is provided by the store as a public service to non-profit organizations. Both meetings in June will deal with "Data Interchange Files - Simplified." Discussions will center around the structure of this file format, how it can be accessed by BASIC programs, and how it can be used by other commercial programs.

Future Meetings of the group will deal with "Visicalc and your Printer", "How to Document VisiCalc Templates", and such other topics as attendees may wish to discuss. Anyone who plans to attend a meeting and who wishes a particular feature of the program demonstrated or has a problem to be solved is invited to contact me in the evening at the number published in the Cider Press. Attendees are invited to bring in copies of their favorite templates to share with the group or to bring in their most troublesome templates for help.

# To Modem or Not to Modem That Is the Connection

By Frank Fennelley

The inaugural meeting of the Communications interest group took place at the Clubhouse ( 1515 Sloat) on Wed. 25 May. There was a large number of very interested members in attendance. The next meeting will be held at the Clubhouse at 7.30 p.m. on Wed. June 22. Meetings will be held on the fourth Wednesday of every month.

Everyone having introduced themselves, the meeting went on to discuss what we want to do over the next few months. We will try and get representatives from Dow Jones & other commercial on-line databases to demonstrate their services. We also hope to get Corvus, 3Com or Apple to demonstrate their local area networks. We will be reviewing modems & software on an ongoing basis.

Steve Llyod, Howard Wolfe & Philip Bernheim demonstrated CompuServe. CompuServe is a commercial on line data base (some times referred to as an information utility). CompuServe is located in Columbus, Ohio. We communicated with it using an Apple III Access iii ( terminal emulation software) & a Hayes Smart-modem. We used the news service & the barter service. Using the electronic mail feature Howard sent a message to Philip.

We had a couple of questions which no one in the group could answer. Perhaps some other club members can help. If you have information on either of the subjects listed below please drop me short note.

1) The names of European on line databases (such as The Source & CompuServe)

2) The name of CPM software suitable for use with the Novation AppleCat II modem

The next meeting will be held on June 22. David McGuire of Pandair Freight Inc. will explain and demonstrate how his company uses an Apple II with a Hayes modem and Microtelegram for communication between their offices all over the world via the ITT & RCA networks.

The group leader is Frank Fennelly, 940 I Kiely Blvd., Santa Clara, Ca.95051 (408)984-7321

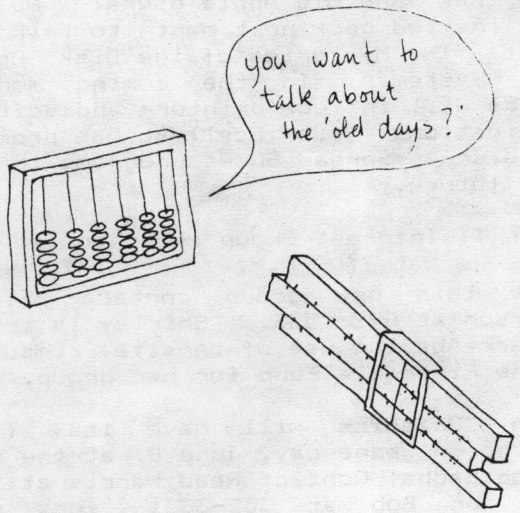
PARTIAL LIST OF BBS NUMBERS IN AREA CODE 415

(Compliments of Peoples Message System, Santee, Ca: via F. Fennelly/D. Johnson)

AABS, Lafayette .....284-9524
Living BBS, Menlo Park.....327-8876
INFO-NET, Foster City .....349-3126
IAC Message Base, Menlo Park....367-1339
RCP/M,RBBS, Marin County.....383-0473
PMS, Pleasanton.....462-7419
PMS,Palo Alto .....493-7691
Conference Tree #1, Berkeley....526-7733
Conference Tree #3, Hayward.....538-3580
Oasis BBS, San Franciso.....591-5509
Connection-80, Fremont.....651-4147
ABBS Computerland, Fremont.....794-9314
PMS, Portola Valley.....851-3453
ABBS PCnet, San Francisco.....863-4703
ABBS, Hayward.....881-5662
Conference Tree #2, S.F.....928:0641

UPCOMING EVENT

There will be a computer swap meet at the Oakland Convention Center on Saturday, July 23. Call 408-266-6768 for further information. (This was obtained from the Saturday want-ad section of the S.F. Chronicle, 5/28/83)



JUNE 1983

| MONDAY | TUESDAY | WEDNESDAY | THURSDAY |
|---|---|---|---|
| | 7 EAST BAY 7:30<br>FORTH 7:30 | | 9 GREEN APPLES 8:00 |
| 13 TELECOMMU-NICATIONS 7:30 | 14 CP/M 7:30<br>VISICALC 7:30<br>NU'ERS 7:30 | 15 BOARD OF DIRECTORS 7:00 | |
| | 21 FORTH 7:30 | 22 APPLE /// 7:30 | |
| 27 TELECOMMU-NICATIONS 7:30 | 28 CP/M 7:30<br>EPSON 7:30 | | 23 GREEN APPLES 8:00 |

JULY 1983

| MONDAY | TUESDAY | WEDNESDAY | THURSDAY |
|---|---|---|---|
| | 5 EAST BAY 7:30<br>FORTH 7:30 | | 7 GREEN APPLES 8:00 |
| 11 TELECOMMU-NICATIONS 7:30 | 12 CP/M 7:30<br>VISICALC 7:30<br>NU'ERS 7:30 | 13 BOARD OF DIRECTORS 7:00 | |
| | 19 FORTH 7:30 | 20 APPLE /// 7:30 | |
| 25 TELECOMMU-NICATIONS 7:30 | 26 CP/M 7:30<br>EPSON 7:30 | | 28 GREEN APPLES 8:00 |

INTEREST GROUP LEADERS

| | | |
|---|---|---|
| Apple /// | Don Norris | 673-7635 (day) |
| CP/M | Jim Ayers | 383-0473(day) |
| | | 383-5759(eves) |
| dBASE II | Shirley Anderson | 892-0522(home) |
| Epson | Michael Fischer | 557-1250 (day) |
| | | 933-4435(eve) |
| Forth | Dudley Ackerman | 626-6295 |
| Green Apples (BASIC) | Gary Owens | 521-4002 |
| Marin Graphics | Reed Harris | 924-7221 |
| | Bob Sachs | 332-3331 |
| Nu'ers | Sami Capron | 388-8631 |
| Pascal | Mike Schnapp | 386-2238 |
| Product Review | "Woody" Liswood | 585-6375 |
| Telecommunications | Frank Fennelly | (408)984-7321 |
| VisiCalc | Don Scellato | 672-2051(eve) |

APPLE CORE OF LEARNING

# APPLE CORE OFFERINGS

## NOTES

SFAC 1983 DISK NUMBER 1 contains only three programs due to the nature of one of the programs - a hi-res graphics game. This game is called "The Incredible Shrinking Man" which was contributed by the Chiang Brothers. Also included on the disk is a High Score Tabulator and hi-res graphics display program called Gallery.

LIBRARY #1 contains over 340 programs. It is packaged in diskette holders and is bound in a SF Apple Core binder with over 30 pages of documentation. This documentation alone is available for three dollars.

LIBRARY #2 continues the tradition started with Library #1. It contains over 250 programs from the 1980 DOMs.

1981 YEARBOOK contains 12 disks containing all DOM programs from 1981. There is a heavy emphasis on games and business applications.

1983 PROGRAMMING UTILITIES contains a collection of utilities not collected on a single disk before. These utilities come from a variety ofsources such as IAC disks, 1981 DOMs, and 1982 DOMs.

1983 GAME SET consists of two disks containing games not collected in a single set before. It contains a variety of hi-res, lo-res, and text games.

1983 EDUCATION APPLICATIONS is a set of two disks containing interactive learning programs, a grade maintenance program, and GRAMMAR QUEST an interactive learning game.

1983 HOME APPLICATIONS consists of two disks of programs useful around the home. One disk was from the 1982 Home Pak. The second disk is a collection of programs gathered from IAC disks and other recent contributions.

SFAC 1983 DISK 2 - this disk contains a collection of games, home applications, education applications, and utilities.

IACBASE - this is a DataBase Manager provided by the International Apple Core. It is written in run time PASCAL and provides the user with an inexpensive DataBase Manager.

MACHINE LANGUAGE TUTORIAL/UTILITIES - this disk teaches the principles of Machine Language Programming and provides the user with some convenient programming utilities.

| PRODUCT | MTG | MAIL |
|---|---|---|
| Library #1 | 98.00 | 101.50 |
| Library #2 | 98.00 | 101.50 |
| 1981 Yearbook | 98.00 | 101.50 |
| DOMs | | |
| Mar 82 | 5.00 | 7.00 |
| Apr 82 | 5.00 | 7.00 |
| May 82 | 5.00 | 7.00 |
| COLLECTIONS | | |
| Basic Tutor Pak(3) | 20.00 | 22.00 |
| Forth Pak (3) | 20.00 | 22.00 |
| Game Set (2) | 15.00 | 17.00 |
| Home Applications(2) | 15.00 | 17.00 |
| Education Applic.(2) | 15.00 | 17.00 |
| 1983 Prog Util.(1) | 10.00 | 12.00 |
| SFAC Visicalc Temp(1) | 10.00 | 12.00 |
| 1983 Visicalc Util(1) | 18.00 | 22.00 |

All foreign orders: Add 25% to above prices.

---

SFAC MAIL ORDER BLANK

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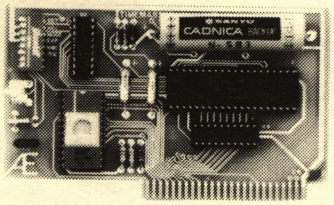
# Apple Peripherals Are All We Make

**That's Why We're So Good At It!**

NEW

## The TIMEMASTER
### Finally, a clock that does it ALL!



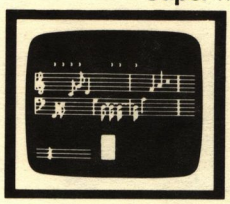
- Designed in 1983 using I.C. technologies that simply did not exist when most other Apple clocks were designed.
- Just plug it in and your programs can read the year, month, date, day, and time — down to 1 millisecond!
- Powerful 2K ROM driver — No clock could be easier to use.
- Full emulation of most other clocks, including Mountain Hardware's Appleclock (but you'll like the TIMEMASTER mode better).
- Compatible with all of Apple's languages, CP/M and PASCAL software on disk.
- Eight software controlled interrupts so you can execute two programs at the same time. (Many examples are included)
- On board timer lets you time any interval up to 48 days long down to the nearest millisecond.

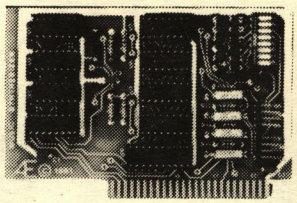
The TIMEMASTER includes a disk with some really fantastic time oriented programs (over 25) plus a DOS dater so it will automatically add the date when disk files are created or modified. This disk is over a $200.00 value alone — we give the software others sell. All software packages for business, data base management and communications are made to read the TIMEMASTER.

If you want the most powerful and the easiest to use clock for your Apple, you want a TIMEMASTER.

**PRICE $129.00**

## Super Music Synthesizer



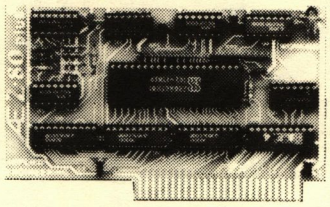


- Complete 16 voice music synthesizer on one card. Just plug it into your Apple, connect the audio cable (supplied) to your stereo, boot the disk supplied and you are ready to input and play songs.
- It's easy to program music with our compose software. You will start right away at inputting your favorite songs. The Hi-Res screen shows what you have entered in standard sheet music format.
- Now with new improved software for the easiest and fastest music input system available anywhere.
- We give you lots of software. In addition to Compose and Play programs, the disk is filled with over 30 songs ready to play.
- Easy to program in Basic to generate complex sound effects. Now your games can have explosions, phaser zaps, train whistles, death cries. You name it, this card can do it.
- Four white noise generators which are great for sound effects.
- Plays music in true stereo as well as true discrete quadraphonic.
- Full control of attack, volume, decay, sustain and release.
- Will play songs written for ALF synthesizer (ALF software will not take advantage of all the features of this board. Their software sounds the same in our synthesizer.)
- Automatic shutoff on power-up or if reset is pushed.
- Many many more features.

**PRICE $159.00**

NEW

## Z-80 PLUS!



- An on-card PROM eliminates many I.C.'s for a cooler, less power consuming board. (We use the Z-80A at a fast 3.58 MHZ)
- Does EVERYTHING the other Z-80 boards do, plus Z-80 interrupts.
- All new 1983 design incorporates the latest in I.C. technologies.
- Complete documentation included. (User must furnish software)

- TOTALLY compatible with ALL CP/M software.
- Executes the full Z-80 and 8080 instruction set.
- Fully compatible with microsoft disks (no pre-boot required).

The Z-80 PLUS turns your Apple into a CP/M based computer. This means you can access the largest body of software in existence. Two computers in one and the advantages of both, all at an unbelievably low price.

**COMING SOON:** The Z-80 Plus for the Apple III

**PRICE $139.00**

## Analog to Digital Converter

- 8 Channels
- 8 Bit Resolution
- On Board Memory
- Fast Conversion (.078 ms per channel)
- Eliminates the Need to Wait for A/D Conversion (just PEEK at data)
- A/D Process Totally Transparent to Apple (looks like memory)

The analog to digital conversion takes place on a continuous, channel sequencing basis. Data is automatically transferred to on board memory at the end of each conversion. No A/D converter could be easier to use.

Our A/D board comes standard with 0, 10V full scale inputs. These inputs can be changed by the user to 0, -10V, or -5V, +5V or other ranges as needed.

Information on temperature sensors is given in manual.

The user connector has +12 and -12 volts on it so you can power your sensors.

| | | | |
|---|---|---|---|
| Accuracy | 0.3% | Input Resistance | 20K Ohms Typ |

A few applications may include monitoring and control of ● flow ● temperature ● humidity ● wind speed ● wind direction ● light intensity ● pressure ● RPM ● storage oscilloscope ● soil moisture and many more.

We also manufacture a 16 channel digital input/output board for control applications.

**PRICE $129.00**

NEW

## IIe Only: 80 Column, 64K RAM Card

- Expand your Apple IIe to 128K memory.
- Provides an 80 column text display.
- TOTALLY compatible with ALL Apple software and languages, there are NO exceptions.
- Automatically expands VisiCalc to 95K storage. In 80 columns!
- COMPLETE documentation included. (We don't make you refer to the Apple manual as others do.)
- Uses the same commands as the Apple 80 column board.
- Incorporates the latest high speed, low power I.C. technologies.
- Plugs into the Apple IIe expansion slot.
- Simply the best expansion card for your Apple IIe at any price, offering you phenomenal performance at a very nominal price.

**PRICE $149.00**

Our boards are far superior to most of the consumer electronics made today. All I.C.'s are in high quality sockets with mil-spec. components used throughout. P.C. boards are glass-epoxy with gold contacts. Made in America to be the best in the world. All products work in APPLE IIe, II and II+. (Except 80 column card.)

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